

CLAIMS

1. A lithium ion secondary battery comprising a battery element obtained by alternately stacking a plurality of positive electrodes having layers of a positive electrode active material formed on both sides of positive current collectors and a plurality of negative electrodes having layers of a negative electrode active material formed on both sides of negative current collectors through separators in such a way that the positive electrode active material layers face the negative electrode active material layers, the battery element impregnated with liquid electrolyte and held by a laminate case, the lithium ion secondary battery having a 10-second output value of 3000 W/kg or above at a depth of discharge capacity of 50% and 25°C and having the following configuration in which:

(1) the positive electrode active material has an average particle size of 3 to 10 μm and the positive electrode excluding the current collector has a thickness of 30 to 110 μm ,

(2) the negative electrode active material has an average particle size of 5 to 10 μm and the negative electrode excluding the current collector has a thickness of 30 to 110 μm , and

(3) terminals of the positive electrode and the negative electrode are led out to the outer edge part with the terminals separated from each other and the positive electrode terminal and the negative electrode terminal respectively satisfy the formula:

$$B/A \geq 0.57$$

where A is a width of a region of the active material region perpendicular to the direction of current and B is a width of the electrode terminal perpendicular to the direction of current.

2. The lithium ion secondary battery according to claim 1, characterized in that the positive electrode terminal and the negative electrode terminal are led out facing one another.

5

3. The lithium ion secondary battery according to claim 1 or 2, characterized in that parts of the positive electrode terminal and the negative electrode terminal exposed from the laminate case have surface areas wider than the surface areas of the positive electrode terminal and the negative electrode terminal in the laminate case.

10

4. A battery pack comprising a combination of a plurality of lithium ion secondary batteries according to any of claims 1 to 3 through the positive electrode terminal or negative electrode terminal.

15

5. The battery pack according to claim 4 comprising the positive electrode terminal and the negative electrode terminal that can be cooled with a cooling air.